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# X-Ray Spectroscopic Observations of a Metal-Poor Globular Cluster X-Ray Binary System

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Poster Presentation 23

**X-RAY SPECTROSCOPIC OBSERVATIONS OF A METAL-POOR  
GLOBULAR CLUSTER X-RAY BINARY SYSTEM**

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X2127+119 is a low-mass X-ray binary (bright neutron star - normal star system) in NGC7078, a metal-poor globular cluster of stars located 10 kpc ( $3 \times 10^{22}$  cm) away, just outside of the Milky Way Galaxy. X2127+119 is the brightest X-ray source in the globular cluster, and it coincides with a dim optical star, AC211. This low-mass X-ray binary exhibits extremely bright X-ray bursts and has a possible corona surrounding the disk of matter accreting onto the neutron stars surface. Spectroscopic observations, which measure brightness as a function of energy, offer insight into the conditions in the X-ray emitting gas. To date the best spectroscopic observatory is the Advanced Satellite for Cosmology and Astrophysics (ASCA), a joint Japanese-U.S. mission. In preparation for study of higher-resolution spectra from the Chandra X-ray Observatory (Advanced X-ray Astrophysics Facility), we examined the ASCA observations of X2127+119 from 1995. We fit the continuum, identified discrete emission lines and the ions which produce them, and tested two possible modes for the heating mechanism, in order to probe the temperature, density, ionization level, and geometry of the line emitting gas.